

WHAT IS CLAIMED IS:

1. A method comprising:

sending, from a sourcing host to one or more network devices, one or more packets addressed to a multicast group address;

5 issuing, by a receiving host, a join command to the one or more network devices in an attempt to reliably join the multicast group address;

determining whether any packets are received by the receiving host within a designated time period associated with the attempt; and

10 if any packets are received by the receiving host within the designated time period, determining that the receiving host is reliably joined to the multicast group address; otherwise, if any packets are not received by the receiving host within the designated time period, determining that the receiving host is not reliably joined to the multicast group address.

15 2. The method of claim 1, wherein the sourcing and receiving hosts are selected from the group consisting of a portable wireless communication device, mobile wireless communication device, wireline communication device, wireless console, wireline console, repeater, site controller, comparator, telephone interconnect device, internet protocol telephony device, call logger, scanner and gateway.

20 3. The method of claim 1, wherein the packets comprise one of test packets and payload.

25 4. The method of claim 3, wherein the payload comprises any one of an audio payload, a data payload, a video payload, and a multimedia payload.

30 5. The method of claim 3, wherein the step of sending packets comprises sending multiple test packets before sending payload.

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6. The method of claim 1 comprising sending, from a controller to the sourcing and receiving hosts, call grant messages including the multicast group address.

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5 7. The method of claim 1 comprising sending, from a controller to the receiving host, indicia of whether the sourcing host is actively sourcing payload.

10 8. The method of claim 7 wherein the step of issuing a join command is performed only in response to the receiving host receiving indicia that the sourcing host is actively sourcing payload.

15 9. The method of claim 1, wherein the step of issuing a join command comprises, sending, from the receiving host, an IGMP Join message to one or more local network devices.

20 10. The method of claim 1 further comprising, if the receiving host is determined to not be reliably joined to the multicast group address,

issuing, by the receiving host, a leave command to the one or more network devices; and

re-attempting to reliably join the multicast group address, comprising:

issuing, by the receiving host, a second join command to the one or more network devices in a second attempt to reliably join the multicast group address;

determining whether any packets are received by the receiving host within a designated time period associated with the second attempt; and

if any packets are received by the receiving host within the designated time period, determining that the receiving host is reliably joined to the multicast group address; otherwise, if any packets are not received by the receiving host within the designated time period, determining that the receiving

host is not reliably joined to the multicast group address.

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11. The method of claim 10, wherein the step of issuing a leave command comprises, sending, from the receiving host, an IGMP Leave message to one or more local network devices.

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12. The method of claim 1, wherein the step of determining whether any packets are received by the receiving host within a designated time period comprises the receiving host, after issuing the join command, starting a timer having a predetermined expiration time; and  
10 determining whether any packets addressed to the multicast group address are received by the receiving host before the expiration time.

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13. A method comprising:  
15 sending, from a controller to a first and second host desiring to participate in a point-to-point call, a first and second multicast group address;  
sending, from the first host to one or more network devices, one or more packets addressed to the first multicast group address;

20 issuing, by the second host, a join command to the one or more network devices in an attempt to reliably join the first multicast group address;  
determining whether any packets are received by the second host within a designated time period associated with the attempt; and

25 if any packets are received by the second host within the designated time period, determining that the second host is reliably joined to the first multicast group address; otherwise, if any packets are not received by the second host within the designated time period, determining that the second host is not reliably joined to the first multicast group address.

14. The method of claim 13 further comprising, if the second host is determined to not be reliably joined to the first multicast group address, issuing, by the second host, a leave command to the one or more network devices; and  
5 re-attempting to reliably join the first multicast group address, comprising:  
issuing, by the second host, a second join command to the one or more network devices in a second attempt to reliably join the first multicast group address;  
10 determining whether any packets are received by the second host within a designated time period associated with the second attempt; and  
if any packets are received by the second host within the designated time period, determining that the second host is reliably joined to the first multicast group address; otherwise, if any packets are not received by the second host within the designated time period, determining that the second host is  
15 ~~not reliably joined to the first multicast group address.~~

15. The method of claim 13 further comprising:  
sending, from the second host to one or more network devices, packets  
20 addressed to the second multicast group address;  
issuing, by the first host, a join command to the one or more network devices in an attempt to reliably join the second multicast group address;  
determining whether any packets are received by the first host within a designated time period associated with the attempt; and  
25 if any packets are received by the first host within the designated time period, determining that the first host is reliably joined to the second multicast group address; otherwise, if any packets are not received by the first host within the designated time period, determining that the first host is not reliably joined to  
30 ~~the second multicast group address.~~

16. The method of claim 15 further comprising, if the first host is determined to not be reliably joined to the second multicast group address, issuing, by the first host, a leave command to the one or more network devices; and

5 re-attempting to reliably join the second multicast group address, comprising:

issuing, by the first host, a second join command to the one or more network devices in a second attempt to reliably join the second multicast group address;

10 determining whether any packets are received by the first host within a designated time period associated with the second attempt; and

if any packets are received by the first host within the designated time period, determining that the first host is reliably joined to the second multicast group address; otherwise, if any packets are not received by the first host within the designated time period, determining that the first host is not reliably joined to the second multicast group address.

17. The method of claim 13, wherein the packets comprise one of test packets and payload.

18. The method of claim 13, wherein the payload comprises any one of an audio payload, a data payload, a video payload, and a multimedia payload.

19. The method of claim 13, wherein the step of sending packets comprises sending multiple test packets before sending payload.

20. The method of claim 19, wherein the step of sending packets further comprises sending multiple test packets after sending payload.

21. The method of claim 13 wherein the step of sending first and second multicast group addresses comprises sending, from a controller to the first and second hosts, call grant messages including the first and second multicast group addresses.

5 22. A communication system comprising:

a controller being operable to identify a multicast group address to be used for distributing packet information to participating host devices;

10 a packet network for distributing the multicast group address to the participating host devices, the packet network being adapted to set up a multicast distribution tree between participating devices having successfully joined the multicast group address; and

15 means for determining whether the participating host devices have reliably joined the multicast group address based on whether the participating host devices receive any packets on the multicast group address before expiration of a designated time period.